COMMENTS OF STATES AND CITIES SUPPORTING THE PETITION FOR RULEMAKING REGARDING THE DEPARTMENT OF ENERGY'S PETROLEUM EQUIVALENCY FACTOR

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I. INTRODUCTION

Our States and Cities[1] hereby submit these comments in response to the United States Department of Energy's ("DOE") notice of petition for rulemaking: Petroleum Equivalence Factor,[2] Notification of Petition for Rulemaking, 86 Fed. Reg. 73,992 (December 29, 2021) ("Notice"). We support the petition submitted by the Natural Resources Defense Council and Sierra Club ("Petition") that requests that DOE undertake a rulemaking to update the petroleum equivalency factor ("PEF"), because the current PEF is an obstacle to the goals of the federal fuel economy program and outdated.

For the purposes of the Corporate Average Fuel Economy ("CAFE") program, a vehicle's fuel economy means "the average number of miles traveled by an automobile for each gallon of gasoline (or equivalent amount of other fuel) used." 49 U.S.C. § 32901(a)(11). Electric and other alternative-fueled vehicles do not use gasoline or "other fuel," because "fuel" is defined as gasoline, diesel, or other liquid or gaseous fuel. 49 U.S.C. § 32901(a)(10). Thus, these vehicles have no "fuel economy" value. However, Congress wanted to incentivize the production and sale of these vehicles by allowing manufacturers to use them as a part of their overall strategy to comply with the fuel economy standards. *See* H.R. Rep. No. 96-730, at 14 (1979). It therefore mandated petroleum-equivalent fuel economy values for electric and other alternative-fueled vehicles to be used in calculating the average fuel economy of auto manufacturers' respective fleets. Pub. L. No. 96-185 § 18, 93 Stat. 1324, 1336 (1980). At the same time, Congress intended that manufacturers would continue to improve the fuel efficiency of their conventional fleets. *Cf.* H. Rep. 100-476, at 12 (Dec. 14, 1987) ("This incentive [to manufacture alternative-fueled vehicles] is not intended to allow manufacturers to relax their efforts to achieve better mileage in the remainder of their fleets that are still fueled with gasoline.").

The current petroleum-equivalent fuel economy values for electric vehicles frustrate these congressional purposes, because the present values are too high for at least two reasons. First, the PEF, which is "the key component in the calculation of petroleum-equivalent fuel economy values for electric vehicles," 65 Fed. Reg. 36,781, 36,986 (June 12, 2000), is based on obsolete

[1] The States of California, Delaware, Hawaii, Illinois, Maine, Maryland, Michigan, Minnesota, Nevada, New York, Oregon, Rhode Island, and Vermont; the Commonwealth of Pennsylvania; the District of Columbia; and the Cities of Los Angeles, New York, and Oakland.

[2] While the title of the notice states "equivalence," the regulations say "equivalency." *See* 10 C.F.R. § 474.2 (defining PEF).

data from over two decades ago when DOE last promulgated the PEF. *See id.* Second, DOE improperly incorporated a multiplier not applicable to electric vehicles when it previously determined the PEF. As a result, the PEF is significantly inflated, which leads to an overestimation of the petroleum-equivalent fuel economy values for electric vehicles relative to a value consonant with the statutory factors that DOE must consider. And this overvaluation, in turn, has the practical effect of diluting both the incentive for auto manufacturers to manufacture electric vehicles and the statutory mandate to improve the fuel efficiency of conventional vehicles. *See* 49 U.S.C. § 32902(a).

To illustrate the potential for this effect, say a hypothetical auto manufacturer's fleet must meet a fuel economy standard of 32.5 mpg, the manufacturer produces 26,000 conventional vehicles in a given model year, and the average fleetwide fuel economy of those vehicles is 31.9 mpg.[3] If the petroleum-equivalent fuel economy for electric vehicles was 50 mpg, the manufacturer could comply with the fuel economy standard by manufacturing 1,500 electric vehicles, which would bring its average fleetwide fuel economy to 32.6 mpg. However, if the petroleum-equivalent fuel economy of electric vehicles was instead 300 mpg, that manufacturer would be able to meet the fuel economy standard by producing only 500 electric vehicles, which would make its average fleetwide fuel economy 32.5 mpg. Likewise, if the petroleum-equivalent fuel economy of electric vehicles was 300 mpg and a manufacturer produces 1,500 electric vehicles, it would need to make fewer improvements to the fuel efficiency of its conventional vehicles in order to comply with the standards. In other words, higher petroleum-equivalent fuel economy values for electric vehicles make it easier for manufacturers to comply with the CAFE standards, meaning that there is less pressure to produce more electric vehicles or to improve the fuel efficiency of their conventional vehicles than there would be if the petroleum-equivalent fuel economy values were lower.

DOE must therefore update the PEF, not only because the currently inflated PEF undermines the congressional intent of the CAFE program to conserve energy and incentivize the production of electric vehicles, but also because DOE has not complied with its statutory mandate to review and update as necessary the petroleum-equivalent fuel economy values for electric vehicles on an annual basis. 49 U.S.C. § 32904(a)(2)(B) (requiring the Secretary of Energy to "review those values each year and determine and propose necessary revisions"). Accordingly, our States and Cities support the Petition and encourage DOE to initiate the rulemaking process to update the PEF.

II. STATUTORY AND REGULATORY BACKGROUND OF THE PEF

In 1975, Congress enacted the Energy Policy and Conservation Act ("EPCA") and directed the Secretary of Transportation—who has delegated the duty to the National Highway Traffic Safety Administration ("NHTSA")[4]—to set fuel economy standards for automobiles as part of a suite of measures to reduce energy consumption. Pub. L. No. 94-163 § 2(5), 89 Stat. 871, 874, 901-02 (1975). EPCA requires NHTSA to set "maximum feasible" average fuel economy standards for

[3] This example—and the corresponding illustration in Part III, *infra* at 5—is based on the example provided by NHTSA of how to calculate compliance with fuel economy standards. 49 C.F.R. Pt. 531, App. A.

[4] 49 C.F.R. § 1.94(c).

each model year. 49 U.S.C. § 32902(a); Pub. L. No. 103-272 § 1(e), 108 Stat. 745, 1059 (1994). As originally enacted, EPCA did not include electric vehicles in its definition of "automobile" or provide any method to calculate their "fuel economy" equivalency.

In 1980, Congress required that a manufacturer's "average fuel economy [] be calculated . . . to include equivalent petroleum based fuel economy values for various classes of electric vehicles" "as an incentive for the early initiation of industrial engineering development and initial commercialization of electric vehicles in the United States." Pub. L. No. 96-185 § 18, 93 Stat. 1324, 1336 (1980).[5] Congress directed DOE to "determine [those] equivalent petroleum based fuel economy values" for electric vehicles by considering four factors, *id*., which are substantively identical to the current statutorily required factors:

> "(i) the approximate electrical energy efficiency of the vehicle, considering the kind of vehicle and the mission and weight of the vehicle.
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> (ii) the national average electrical generation and transmission efficiencies.
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> (iii) the need of the United States to conserve all forms of energy and the relative scarcity and value to the United States of all fuel used to generate electricity.
>
> (iv) the specific patterns of use of electric vehicles compared to petroleum-fueled vehicles."

49 U.S.C. § 32904(a)(2)(B). Congress further required that DOE "review these values on an annual basis and [] propose revisions, if necessary," Pub. L. No. 96-185 § 18, 93 Stat. 1324, 1337 (1980), which is a statutory mandate still in place today, 49 U.S.C. § 32904(a)(2)(B) ("The Secretary shall review those values each year and determine and propose necessary revisions . . . .").

DOE first promulgated a method to calculate the petroleum-equivalent fuel economy values of electric vehicles in 1981. 46 Fed. Reg. 22,747 (April 21, 1981). As DOE explained, the main component of the calculation was the PEF: "Equivalent fuel economy is simply determined by converting the vehicle electrical efficiency into miles per gallon and multiplying by the corresponding PEF values." *Id*. at 22,749; *see* 45 Fed. Reg. 34,008, 34,010 (May 21, 1980) (the proposed rule defined the PEF as "a single factor incorporating the parameters ii-iv specified by Congress in the Act"). DOE noted that "[t]he PEF values are based on the best available projections for the factors which comprise it," and "[b]ecause these are projections, there is a degree of uncertainty involved, and the values may change in future years." 46 Fed. Reg. at 22,750. In 1994, DOE proposed an update to the method of calculating the petroleum-equivalent fuel economy values for electric vehicles, 59 Fed. Reg. 5,336 (Feb. 4, 1994); however, that proposal was never finalized, 86 Fed. Reg. at 73,995.

[5] A manufacturer's average fleetwide fuel economy—which is the value used to determine compliance with the CAFE standards—is calculated by dividing (i) the number of passenger automobiles manufactured by the manufacturer in a model year by (ii) the sum of the fractions obtained by dividing the number of passenger automobiles manufactured by the manufacturer in that model year by the fuel economy measured for that model. 49 U.S.C. § 32904(a)(1)(B).

By that time, Congress had also expanded the definition of "automobile." Pub. L. No. 102-486 § 403, 106 Stat. 2776, 2876-79 (1992). While certain classes of electric vehicles qualified as "automobiles" under the new definition, they did not consume "fuel" as defined by the statute, and thus it was still "impossible" to assign a "fuel economy" equivalency to electric vehicles "without a method [such as the one promulgated by DOE in 1981] for expressing the electrical energy consumption rate as an equivalent consumption rate of gasoline." 65 Fed. Reg. at 36,986.

In 1999, DOE proposed a new method to calculate the petroleum-equivalent fuel economy of electric vehicles, 64 Fed. Reg. 37,905 (July 14, 1999), which was finalized in 2000, 65 Fed. Reg. at 36,986. DOE defined "petroleum-equivalent fuel economy" as "the value, expressed in miles per gallon, that is calculated for an electric vehicle . . . [and] use[d] in determining the vehicle manufacturer's corporate average fuel economy." 10 C.F.R. § 474.2. It also defined the PEF as "the value . . . which incorporates the parameters listed in 49 U.S.C. 32904(a)(2)(B) and is used to calculate the petroleum-equivalent fuel economy." *Id*. To calculate the PEF, DOE multiplied four factors: the gasoline-equivalent energy content of electricity factor, the "fuel content" factor, the petroleum-fueled accessory factor,[6] and the driving pattern factor. 65 Fed. Reg. at 36,987. DOE explained that "[t]he calculation procedure converts the measured electrical energy consumption of an electric vehicle into a raw gasoline-equivalent fuel economy value, and then divides this value by 0.15 to arrive at a final petroleum-equivalent fuel economy value which may then be included in the calculation of the manufacturer's corporate average fuel economy." *Id*. (further explaining that "[t]wo additional factors are present in the equation, but these will usually have a value of unity [or one] and thus will not influence the value of the PEF"). Notably, this calculation was "based on the existing regulatory approach at 49 U.S.C. 32905 for determining the petroleum-equivalent fuel economy of alternative fueled vehicles." *Id*. This is significant, not only because that 0.15 factor does not apply to electricity or electric vehicles,[7] but also because "[t]he fuel content factor value of 1/0.15 is equivalent to a multiple of 6.67." *Id*.

The PEF values calculated in 2000 are still in use today, despite the statutory mandate to annually review and update the regulations as well as DOE's own regulatory deadline to review the PEF calculations five years after the 2000 rule was published. 49 U.S.C. § 32904(a)(2)(B); 10 C.F.R. § 474.5. As further explained below in Section IV, the current PEF values are outdated and inflated, and DOE must update the PEF to comply with its statutory and regulatory duties.

III. THE CURRENT PETROLEUM-EQUIVALENT FUEL ECONOMY VALUES FOR ELECTRIC VEHICLES UNDERMINE CONGRESSIONAL INTENT

The express purposes of the CAFE program are to "conserve energy" and "provide for improved energy efficiency of motor vehicles." Pub. L. No. 94-163 §§ 2(4) and (5), 89 Stat. 871, 874 (1975). Congress also intended through EPCA's compliance provisions "to provide an incentive for vehicle manufacturers to produce electric vehicles by including the expected high equivalent fuel economy of these vehicles in the CAFE calculation and thereby to accelerate the early

[6] DOE has also referred to the petroleum-fueled accessory factor as the "accessory factor." 46 Fed. Reg. at 22,748.

[7] Pursuant to this provision, "[a] gallon of *a liquid alternative fuel* used to operate a dedicated automobile is deemed to contain .15 gallon of fuel." 49 U.S.C. § 32905(a) (emphasis added).

commercialization of electric vehicles . . . ." 46 Fed. Reg. at 22,747 (citing Pub. L. No. 96-185 § 18, 93 Stat. 1324, 1336 (1980)).

An inflated PEF undermines these statutory goals, because it results in exaggerated petroleum-equivalent fuel economy values for electric vehicles that significantly and artificially boost auto manufacturers' average fleetwide fuel economy. Every single electric vehicle manufactured for sale counts toward CAFE compliance. Thus, when the petroleum-equivalent fuel economy values of those vehicles are overestimated, they reduce the incentive to produce more electric vehicles and, for similar reasons, unduly dilute the requirement to improve the fuel economy of conventional vehicles.

To expand upon the example provided in the Introduction, *supra* at 1, say that the fuel economy standard that Manufacturer X must meet is 32.5 mpg and that Manufacturer X produces 27,500 light-duty vehicles across 9 models in a given model year, as reflected in the following table.

Model	**Number of Vehicles Manufactured**	**Fuel Economy (mpg) *Petroleum-Equivalent Fuel Economy (mpg)**
Model 1	2,000	34.6
Model 2	2,000	33.8
Model 3	1,000	34.4
Model 4	3,000	32.9
Model 5	8,000	32.2
Model 6	2,000	33.1
Model 7	5,000	30.6
Model 8	3,000	28.5
Electric Model 9 [8]	1,500	*50

The average fleetwide fuel economy for Manufacturer X in this model year would be 32.6 mpg. However, if the petroleum-equivalent fuel economy of Electric Model 9 was instead 300 mpg—approximately the current value[9]—then Manufacturer X's average fleetwide fuel economy would be 33.5 mpg. This would mean that Manufacturer X could decide to manufacture as few as 500—rather than 1,500—electric vehicles and still comply with the fuel economy standard. Alternatively, Manufacturer X could decide to significantly reduce the fuel efficiency of its conventional vehicles. Specifically, Manufacturer X could still comply with the fuel economy standard if it reduced the fuel economy of both Model 2 and Model 3—which together comprise 11% of its fleet—to 28 mpg.

Thus, the inflated petroleum-equivalent fuel economy values of electric vehicles limit the incentive to make larger numbers of electric vehicles, because manufactures already receive a significant boost to their average fleetwide fuel economy for each electric vehicle produced.

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[8] The petroleum-equivalent fuel economy values selected for this example are similar to the hypothetical values provided in the Petition, *see* 86 Fed. Reg. at 73,996, which were solely intended to be illustrative. Our States and Cities take no position in this comment on the hypothetical values in the Petition and reserve our ability to express our views, if any, on specific values in any rulemaking DOE opens.

[9] *See id.*

They also provide a greater than necessary offset to the requisite fuel efficiency of manufacturers' conventional vehicles, which reduces the need to make improvements to their conventional vehicle fleets to meet the CAFE standards. Moreover, they may enable auto manufacturers to decrease the fuel efficiency of their conventional vehicle fleets and still remain compliant. This dilution of the incentive to manufacture electric vehicles and the requirement to improve conventional vehicles' fuel efficiency has become more prominent in recent years as sales of electric vehicles have increased, *see* Part IV.B, because there are more vehicles generating this per-vehicle boost to manufacturers' average fleetwide fuel economy. These effects of an inflated PEF undermine the congressional intent of the CAFE program.

Moreover, these consequences of an inflated PEF do not comport with congressional intent to protect consumers through improved fuel efficiency or the protection of public health and the environment, *see* Pub. L. No. 110-140, 121 Stat. 1492, 1492 (2007), because they dilute the incentives and requirements that would save consumers money at the pump and reduce emissions of harmful air pollution from light-duty vehicles.

Our States and Cities accordingly support updating the PEF in order to effectuate the congressional intent of the CAFE program.

IV. DOE SHOULD UPDATE THE PETROLEUM-EQUIVALENT FUEL ECONOMY VALUES OF ELECTRIC VEHICLES

A. DOE Has Unduly Delayed Its Review of the Petroleum-Equivalent Fuel Economy Values of Electric Vehicles

For over two decades, DOE has not proposed revisions to the petroleum-equivalent fuel economy values of electric vehicles or the PEF calculation used to generate the equivalency values. DOE is required to review the petroleum-equivalent fuel economy values each year and propose necessary revisions. 49 U.S.C. § 32904(a)(2)(B). Moreover, DOE committed to conducting a review of its PEF regulation five years after the publication of its final rule in 2000. 10 C.F.R. § 474.5. While there is no evidence that DOE ever conducted these reviews, even if it did, DOE has never proposed any revisions to the 2000 petroleum-equivalent fuel economy values.

Section 32904(a)(2)(B) states that DOE "shall review" the petroleum-equivalent fuel economy values "each year and determine and propose necessary revisions" based on four enumerated factors. *See Dickson v. Sec'y of Def.*, 68 F.3d 1396, 1401 (D.C. Cir. 1995) ("shall" is a mandatory term). DOE has acknowledged this requirement since it first set the PEF in 1981, 46 Fed. Reg. at 22,750, and new data is available for DOE to consider, yet it has not proposed any revisions to the petroleum-equivalent fuel economy values for over two decades. As courts have made clear, this delay is impermissible. *See Bellevue Hosp. Ctr. v. Leavitt*, 443 F.3d 163, 178–79 (2d Cir. 2006) (agency violated the statute by its failure to adequately collect and measure occupational mix data in time to competently apply the occupational mix adjustment in the hospital area wage index on schedule); *Nat. Res. Def. Council, Inc. v. Train*, 510 F.2d 692, 704 (D.C. Cir. 1974) (EPA failed to meet its duty under the Federal Water Pollution Control Act Amendments of 1972 when its "statutory deadline had passed without the publication of a single effluent limitation guideline"). Our States and Cities urge DOE to undertake the requisite

review. *See Envt'l Health Trust v. FCC*, 9 F.4th 893, 907 (D.C. Cir. 2021) ("[A]n agency's decision not to initiate a rulemaking must have some reasoned basis, and an agency cannot simply ignore evidence suggesting that a major factual predicate of its position may no longer be accurate.").

When first setting the petroleum-equivalent fuel economy values in 1981, DOE set the PEF values "based on the best available projections." 46 Fed. Reg. at 22,750. DOE relied on the requisite annual review to support its projections, explaining that "if these projections change significantly of [sic] if better data becomes available, these values can be revised at a later date." 45 Fed. Reg. at 73,685. DOE recognized that these projections involved uncertainty and that "values may change in future years." 46 Fed. Reg. at 22,750. Despite acknowledging the need for annual reviews and future revisions, DOE reviewed and updated the PEF and the petroleum-equivalent fuel economy values for electric vehicles just one other time in 2000.

In its 2000 rulemaking, DOE amended the regulations for calculating the petroleum-equivalent fuel economy values of electric vehicles to include a mandatory review of the regulations after five years had passed. 10 C.F.R. § 474.5. This review is separate from the preexisting annual review of the petroleum-equivalent fuel economy values required by statute. Specifically, section 474.5 requires DOE to conduct a review of Part 474 five years after the date of publication, that is, in June 2005. *Id*. According to the regulation, DOE was required to publish a notice in the Federal Register soliciting stakeholder input and publish the findings of its review and any resulting adjustments in the Federal Register. *Id*. DOE's express reason for adding this review was "to determine whether any update and/or revisions [were] necessary." *Id*.

DOE justified its 2000 calculation of the PEF in part on its regulatory requirement to conduct the five-year review. 65 Fed. Reg. at 36,988, 36,990. DOE acknowledged that multiple aspects of its analysis were subject to change and that it would closely monitor developments related to electric vehicles and their use. 65 Fed. Reg. at 36,990. For example, DOE "anticipate[d] that better data on many aspects of EV use [would] be available" by 2005. 65 Fed. Reg. at 36,988. DOE also planned to consider modifying the driving pattern factor at its five year-review. 65 Fed. Reg. at 36,990. There is no evidence that this required review occurred. *Borough of Lansdale, Pennsylvania v. Fed. Power Comm'n*, 494 F.2d 1104, 1113 (D.C. Cir. 1974) ("Settled law holds administrative agencies to compliance with their own regulations.").

Accordingly, because DOE's rulemaking is long overdue under both section 32904(a)(2) and DOE regulations, DOE should grant the Petition and undertake a review of the PEF.

B. DOE Should Evaluate the Petroleum-Equivalent Fuel Economy Values Based on New and Updated Data and the Statutory Factors in Section 32904(a)(2)

In the review that DOE is required to conduct, DOE must consider new and updated data and assess whether the four statutory factors are appropriately accounted for in its 2000 calculation of the PEF. Not only is more and recent data available for DOE to consider, but DOE should reevaluate the expression in the PEF calculation of the statutory factor regarding the need to conserve energy and the relative scarcity and value of fuel used to generate electricity, because it is based on inapplicable statutory provisions rather than on section 32904(a)(2)(B).

DOE must consider updated data as it conducts its required review. As DOE itself predicted, the values DOE assigned to the variables in the PEF equation were likely to change over time in light of updated, or previously unavailable, data.[10] *Cf. Dow AgroSciences LLC v. Nat'l Marine Fisheries Serv.*, 707 F.3d 462, 473 (4th Cir. 2013) ("[W]hen an agency acknowledges that its data are either outdated or inaccurate, it should, at the very least, analyze the new data or explain why it nevertheless chose to rely on the older data."). The Petition notes that the nation's fossil-fuel electricity generation efficiency and the generation fuel mix have changed since 2000. *See e.g.*, 86 Fed. Reg. at 73,996. In light of this and other available information, DOE should review and update how it accounted for the grid composition and the efficiency of electric vehicles in the 2000 PEF calculation.[11] 64 Fed. Reg. at 37,908 (in 1999, "the majority of electricity [was] generated at fossil fuel burning powerplants"); *id*. (focusing on the relative energy efficiency of the full energy cycles of gasoline and electricity (i.e. the off-board process) and not the efficiency of electric vehicles to convert electrical energy to power the vehicles (i.e. the on-board process)).

New data are also available to inform DOE's consideration of the statutory factor, "the specific patterns of use of electric vehicles compared to petroleum-fueled vehicles." 49 U.S.C. § 32904(a)(2)(B)(iv). This statutory factor is represented by the driving pattern factor, which DOE assigned a value of 1 in 1981 and again in 2000. 65 Fed. Reg. at 36,987; 46 Fed. Reg. at 22,750. Both times, DOE noted the lack of available or sufficient data and committed to reviewing its expression of this statutory factor after future data had accumulated. 65 Fed. Reg. at 36,990; 46 Fed. Reg. at 22,750 ("Because there are a limited number of EVs in use, DOE believes that sufficient data on actual driving patterns of EVs are unavailable."); *see also* 64 Fed. Reg. at 37,908-09 (retaining the driving pattern factor "to allow this value to be adjusted if doing so is warranted in the future."). Electric vehicles were not yet mass-produced when DOE calculated the 2000 PEF.[12] Thus, new data about the sales of electric vehicles, the range of electric vehicles, and charging infrastructure—all of which affect the patterns of electric vehicle

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[10] Our States and Cities do not seek to recommend how to update these inputs at this time. Rather, our comments are intended to demonstrate that there is new and updated data available that may be relevant to these inputs and how they are used to calculate the petroleum-equivalent fuel economy values.

[11] *See, e.g.*, U.S. Department of Energy, *All-Electric Vehicles*, https://www.fueleconomy.gov/feg/evtech.shtml#:~:text=Energy%20efficient.,to%20power%20at%20the%20wheels ("EVs convert over 77% of the electrical energy from the grid to power at the wheels. Conventional gasoline vehicles only convert about 12-30% of the energy stored in gasoline to power at the wheels."). *See generally* Robert L. Graham, Julieta Francis, and Richard J. Bogacz, *Challenges and Opportunities of Grid Modernization and Electric Transportation*, Department of Energy (Mar. 2017), accessible at https://www.energy.gov/eere/vehicles/downloads/challenges-and-opportunities-grid-modernization-and-electric-transportation (reflecting on the growth of plug-in electric vehicles and the changes in the electric power grid and the interaction between these trends).

[12] *See* Bureau of Transportation Statistics, *7-9 Gasoline Hybrid and Electric Vehicle Sales: 2000 – 2015* (Jan. 4, 2017), accessible in excel and table version at https://www.bts.gov/archive/publications/pocket_guide_to_transportation/2017/7_Environment/table7_9; Department of Energy, *The History of the Electric Car*, (Sept. 15, 2014), https://www.energy.gov/articles/history-electric-car.

use—are now available for DOE to consider in its review of the petroleum-equivalent fuel economy values.[13]

Additionally, DOE should reevaluate the expression of the need to conserve energy and the relative scarcity and value of fuel used for electricity in the PEF to adhere to the statute. 49 U.S.C. § 32904(a)(2)(B)(iii). In 2000, DOE did not expressly consider the need to conserve energy in any component of the PEF equation.[14] Instead, DOE determined that there was not a scarcity of fuel and decided to add a factor to the PEF equation, the fuel content factor. 65 Fed. Reg. at 36,988; 64 Fed. Reg. at 37,907. This factor was "not intended to be a scarcity factor *per se*, but [did] result in a very substantial adjustment to the raw calculated energy efficiency of electric vehicles." 65 Fed. Reg. at 36,988. The fuel content factor significantly inflates the PEF, as it takes the form of a multiplier of 1/0.15, or 6.667. 64 Fed. Reg. at 37,907; *see* 49 U.S.C. § 32905(b).

Moreover, DOE included the fuel content factor based on provisions of the statute applicable not to electric vehicles, but to alternative-fueled gas and liquid vehicles. 49 U.S.C. § 32905. DOE provided three reasons for applying the fuel content factor from section 32905(a) and (c) to the PEF calculation for electric vehicles: (1) it was consistent with existing regulatory and statutory procedures, (2) it resulted in similar treatment to manufacturers of all types of alternative-fueled vehicles, and (3) it was simple and easy to use. 64 Fed. Reg. at 37,907; 65 Fed. Reg. at 36,987. None of these three reasons are related to the statutory factors in section 32904(a)(2)(B), and DOE did not frame them as such. Nor did DOE provide a detailed explanation for its reasoning.

For example, DOE did not illustrate how the fuel content factor was consistent with existing regulatory and statutory procedures beyond noting that the value of the fuel content factor, 1/0.15, is the same in the petroleum-equivalent fuel economy calculation for electric vehicles as it is in the calculation for alternative-fueled gas and liquid vehicles under section 32905. 65 Fed. Reg. at 36,987; 64 Fed. Reg. at 37,907. But having the same value does not make the fuel content factor's application in the calculation for electric vehicles the same as the fuel content

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[13] *See, e.g.*, Department of Energy, *Electric and Hybrid Electric Vehicle Sales: December 2010 – June 2013*, (July 19, 2013), https://www.energy.gov/downloads/electric-and-hybrid-electric-vehicle-sales-december-2010-june-2013; Department of Energy, *Visualizing Electric Vehicle Sales*, (July 25, 2013), https://www.energy.gov/articles/visualizing-electric-vehicle-sales; Office of Energy Efficiency & Renewable Energy, *Fact #939: August 22, 2016 All-Electric Vehicle Ranges Can Exceed Those of Some Gasoline Vehicles* (Aug. 22, 2016), https://www.energy.gov/eere/vehicles/fact-939-august-22-2016-all-electric-vehicle-ranges-can-exceed-those-some-gasoline; Department of Energy, Alternative Fuels Data Center, *U.S. Public and Private Alternative Fueling Stations by Fuel Type*, accessible at https://afdc.energy.gov/data/10332; Department of Energy, Alternative Fuels Data Center, *Electric Vehicle Charging Infrastructure Trends*, https://afdc.energy.gov/fuels/electricity_infrastructure_trends.html.

[14] In 1980, DOE proposed including the petroleum-fueled accessory factor in the PEF calculation, even though this factor was not specifically identified as a statutory parameter for calculating the petroleum-equivalent fuel economy. DOE included it in the PEF in part based on the third statutory factor, the need to conserve energy, because "petroleum-powered accessories on an electric vehicle can consume significant amounts of petroleum fuel." 45 Fed. Reg. at 34,012.

factor's application in the fuel economy calculation for alternative-fueled vehicles. The calculation for these vehicle types is different. *Compare* 49 U.S.C. § 32904 *with id.* § 32905(a), (c). Moreover, the statute expressly provides that a gallon of liquid alternative fuel and of gaseous fuel "is deemed to contain .15 gallon of fuel," whereas the statute does not provide a fuel content factor for electric vehicles. *Id.* Finally, DOE's third rationale, that the multiplier was simple and easy to use, suggests that DOE prioritized convenience and expediency over reasoned decision-making. *See* 65 Fed. Reg. at 36,989 (DOE was "unable to identify a method that was sufficiently objective, robust, and consistent with established policy directions" and thus "provide[d] electric vehicles the same reported fuel-efficiency incentive (the 1/0.15 factor) that other alternative fuel vehicles currently enjoy"). DOE has had over two decades to consider other methods that are consistent with section 32904 to apply in place of the fuel content factor. DOE should therefore review the fuel content factor in the PEF based on the appropriate statutory section as well as the statutory goals behind the CAFE program and the petroleum-equivalent fuel economy values.

V. CONCLUSION

For the reasons discussed herein, our States and Cities strongly encourage DOE to grant the Petition and undertake a rulemaking to update its PEF regulations. The PEF is based on outdated data and thus, is significantly inflated, which leads to an overestimation of the petroleum-equivalent fuel economy values for electric vehicles and undermines the statutory goals of the CAFE program to conserve energy and incentivize the growth of the electric vehicle market. Despite the availability of new data and the statutory requirement that it annually review and make necessary updates to the petroleum-equivalent fuel economy values for electric vehicles, DOE has not updated the PEF since 2000. Accordingly, DOE must update the PEF to ensure that the petroleum-equivalent fuel economy values for electric vehicles are set at an appropriate level to comport with congressional intent.

Respectfully submitted,

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